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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,041	08/15/2000	W. Michael Kavanaugh	1615.002/200130.503	2270

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Chiron Corporation
Intellectual Property - R440
P.O. Box 8097
Emeryville, CA 94662-8097

EXAMINER
BELYAVSKYI, MICHAIL A

ART UNIT	PAPER NUMBER
1644	15

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/640,041	KAVANAUGH ET AL.	
	Examiner	Art Unit	
	Michail A Belyavskyi	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2001 and 12 June 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) *10-13 and 15-37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

RESPONSE TO APPLICANT'S AMENDMENT

1..The examiner of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Michail Belyavskyi, Art Unit 1644, Technology Center 1600.

2. Applicant's amendment, filed 6/12/02(Paper No. 13), is acknowledged.

Claims 1-37 are pending.

Claims 10-13 and 15-37 stand withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b) as being drawn to a non-elected invention.

Claims 1-9 and 14 wherein the isolated nucleotide nucleic acid molecule comprising a polynucleotide which encodes SEQ ID NO: 4 and the nucleic molecule is SEQ ID NO: 3 are under consideration in the instant application.

In view of the amendment, filed 6/12/02(Paper No. 13), the following rejections remain:

3. The following is a quotation of the second paragraph of 35 U.S.C. 112.

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9 and 14 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 is indefinite for reciting "from about 1 to about 115 of SEQ ID NO: 4" in lines 7-8, and for reciting "from about 2 to about 115 of SEQ ID NO: 4" in lines 9-10. It is unclear how many amino acids constitute "about". One of skill in the art would not know if applicant meant one amino acid, as many as 40 amino acids, or even more.

6. Claim 2 is indefinite for reciting "an isolated nucleic acid molecule comprising about 345 contiguous nucleotides from the coding region of SEQ ID NO: 3" in lines 1-2. It is unclear how many amino acids constitute "about". One of skill in the art would not know if applicant meant a difference of one amino acid, as many as 40 amino acids, or even more.

7. Claim 3 is indefinite for reciting "from about 1 to about 115 of SEQ ID NO: 4" in line 6, and for reciting "from about 2 to about 115 of SEQ ID NO: 4" in line 7. It is unclear how many amino acids constitute "about". One of skill in the art would not know if applicant meant one amino acid, as many as 40 amino acids, or even more.

8. Amended Claim 14 is indefinite for reciting "from about 4 to about 50 of SEQ ID NO: 4" in line 4, and for reciting "from about 9 to about 45 of SEQ ID NO: 4" in line 5. It is unclear how many amino acids constitute "about". One of skill in the art would not know if applicant meant one amino acid, as many as 40 amino acids, or even more.

Applicant's arguments, filed 6/12/02(Paper No. 13), have been fully considered, but have not been found convincing.

Applicant asserts that the instant case is similar to *Andrew Corp and Hybritech* in that the term "about" serves reasonably to define the claimed invention.

Contrary to Applicant's assertions, the use of term "about" in the instant application refers to the number of amino acid of SEQ ID NO: 4 (claims 1, 3 and 14) and a number of nucleotides of SEQ ID NO:3 (claim 2) which does render the claims indefinite. It is unclear how many amino acids constitute "about". One of skill in the art would not know if applicant meant one amino acid, as many as 40 amino acids, or even more and this is critical for the claimed inventions. Moreover, in case of nucleic acid molecule, it would be essential to know the specific number of nucleic acid in the sequence, since only 3 contiguous nucleotides encoded 1 amino acid. In *Hybritech* case the term "about' was related to volume (about 108 liters per mole) and in *Andrew Corp* case the term "about" was related to the time (about 100 % per second) that does not render the claim indefinite.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-9 and 14 stand rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an isolated nucleic acid molecule comprising SEQ ID NO: 3 which encodes a polypeptide comprising SEQ ID NO: 4, a method of making a recombinant vector comprising inserting SEQ ID NO: 3 into a vector in operable linkage to a promoter, a recombinant vector comprising SEQ ID NO: 3, a method of making a recombinant host cell comprising inserting the vector comprising SEQ ID NO: 3, a recombinant host cell thereof, and a method of producing the polypeptide of SEQ ID NO: 3 comprising culturing the host cell, a composition comprising SEQ ID NO: 3 in a pharmaceutically acceptable excipient to identify homologous genes, hybridization, amplification, making recombinant EGFH2 and recombinant EGFH2 fusion proteins, and production of transgenic and knockout mice, and wherein the polypeptide of SEQ ID NO: 4 can be used as an immunogen to make antibodies which specifically bind SEQ ID NO: 4 for detection and immunoprecipitation, and wherein the polypeptide of SEQ ID NO: 4 can be used to screen peptide libraries, and in a yeast two-hybrid screening assay, does not reasonably provide enablement for: A) any isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide comprising amino acid sequence from about 1 to about 115 of SEQ ID NO:4, or from about 2 to about 115 of SEQ ID NO:4, or at least 90 % identical to polypeptide comprising from about 1 to about 115 of SEQ ID NO:4, or

from about 2 to about 115 of SEQ ID NO:4 as recited in claims 1; B) any isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide having amino acid sequence from about 1 to about 115 of SEQ ID NO:4, or from about 2 to about 115 of SEQ ID NO:4, wherein said polypeptide has at least one conservative amino acid substitution and at least 90 % identity with SEQ ID NO:4 , as recited in claim 3; C) any isolated nucleic acid molecule comprising about 345 contiguous nucleotides of SEQ ID NO:3, as recited in claim 2; D) any composition comprising an isolated polynucleotide encoding a polypeptide comprising an amino acid sequence from about 4 to about 50 of SEQ ID NO:4 or from about 9 to about 45 of SEQ ID NO:4, or at least 86 % identical to a polypeptide comprising an amino acid sequence from about 4 to about 50 of SEQ ID NO:4 or from about 9 to about 45 of SEQ ID NO:4 as recited in claim 14.

It is also noted that the terms "comprising" and "having" are an open-ended and expand isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide comprising from 1 to about 115 of SEQ ID NO:4 or comprising from 2 to about 115 of SEQ ID NO:4 recited in claim1, or having an amino acid sequence from about 1 to about 115 or from about 2 to about 115 of SEQ ID NO: 4 recited in claim 3, to include additional non disclosed amino acid sequences .

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims for the same reasons set forth in the previous Office Action, Paper NO: 11, mailed on February 12, 2002.

Applicant's arguments, filed 6/12/02(Paper No. 13), have been fully considered, but have not been found convincing.

Applicant asserts that one of skill in the art is able to make and use a polynucleotide wherein the amino acid sequence at least 90 % identical with SEQ ID NO: 4 and has mitogenic activity.

Contrary to Applicant's assertions, the specification fails to provide sufficient guidance as to which core structure of SEQ ID NO: 4 is essential for maintain its mitogenic activity and which changes can be made in the structure of SEQ ID NO: 4 and still maintained the same function.

Applicant is relying upon certain biological activities and the disclosure of a single species to support an entire genus. It is well known that minor structural differences among even structurally related compounds or compositions can result in substantially different biology, expression, and pharmacology of proteins. Therefore, structurally unrelated nucleic acids having or encoding " at least 90%" or "from about 1 to about 115 of SEQ ID NO: 4 or from about 2 to about 115 of SEQ ID NO: 4" or "from about 4 to 50 of SEQ ID NO:4" or "from about 9 to 45 of SEQ ID NO:4" or an amino acid sequence at least 86% identical to the polynucleotides as recited in claim 14 (c) encompassed by the claimed invention other than "nucleic acids set forth by SEQ ID NO: 3" would be expected to have greater differences in their activities. Since the amino acid sequence of a polypeptide determines its structure and functional properties, predictability of which changes can be tolerated in a polypeptide's amino acid sequence and still retain similar functionality requires knowledge of, and guidance with regard to, which amino acids in the polypeptide's sequence, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification) and detailed knowledge of the ways in which a polypeptide's structure relates to it's functional usefulness. However, the problem of predicting polypeptide structure from mere sequence data of a single amino acid sequence and in turn utilizing predicted structural determinations to ascertain binding or functional aspects of EGFH2, and finally, what changes can be tolerated with respect thereto is complex and well outside the realm of routing experimentation.

The claims as written encompass a broad genus of polypeptides with an unlimited number of possibilities with regard to the length of the polypeptide sequence. Further, making changes up to 10% or 14 % of a polynucleotide sequences does not provide that the encoded protein will retain the same mitogenic activity as the unmutated polynucleotide. One of ordinary skill in the art cannot envision all of the nucleic acid and amino acid substitutions encompassed by the breadth of the claims or all of the isolated nucleic acid molecule that encode from about 1 to about 115 of SEQ ID NO: 4 or from about 2 to about 115 of SEQ ID NO: 4 and having mitogenic activity..

Skolnick and Fetrow (Trends in Biotechnology, 2000. 18(1): 34-39) teach that determining the sequence of a nucleic acid molecule does not provide sufficient information to obtain the structure of a protein. Furthermore, the function of a protein cannot be determined simply by knowing the structure of a protein, as many proteins are multifunctional. Changes in nucleic acid sequences can, therefore, potentially result in changes in essential three-dimensional structures of the given protein, and consequently, it's function.

It is known in the art that even single amino acid changes or differences in a proteins amino acid sequence can have dramatic effects on the protein's function. For example, Mikayama et al. (PNAS, 1993. 90: 10056-10060) teach that the human glycosylation factor (GIF) protein differs from human macrophage migration inhibitory factor (MIF) by a single amino acid residue (see Figure 1 in particular). Yet, Mikayama et al. further teach that GIF is unable to carry out the function of MIF and MIF does not demonstrate GIF activity (see Abstract in particular).
In re Fisher, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. Since the amino acid

sequence of a polypeptide determines its structural and functional properties, predictability of which derivatives will retain functionality requires knowledge of, and guidance with regard to, which amino acids in the polypeptide's sequence contribute to its structure, and therefore, function. The problem of predicting which derivatives of a protein will retain functionality and which will not is complex and well outside the realm of routine experimentation. Because of the lack of sufficient guidance and predictability in determining which nucleic acid sequences encode EGFH2 structures and would lead to functional EGF2 proteins with the desired properties and that the relationship between the sequence of a peptide and it's tertiary structure (i.e. its activity) was not well understood and was not predictable (e.g. see Ngo et al, in The Protein Folding Problem and Tertiary Structure Prediction, 1994. (ed.), Birkhauser, Boston, MA, pp. 433 and 492-495.); it would require an undue amount of experimentation for one of skill in the art to arrive at the breadth of proteins encompassed by the claimed invention.

11. Claims 1-9 and 14 stand rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the same reasons set forth in the previous Office Action, Paper NO: 11, mailed on February 12, 2002.

Applicant's arguments, filed 6/12/02(Paper No. 13), have been fully considered, but have not been found convincing.

Applicant asserts that the instant specification describes an actual reduction to practice of a human EGFH2 polynucleotide encoding amino acids from about 1 to about 115 or from about 2 to about 115 of SEQ ID NO:4 (page 36, Example1) and that instant specification describes methods for identifying a polypeptide or variant thereof that has mitogenic activity (page 10, lines 13-20 of the instant application as filed). Consequently, each of the claimed polynucleotides have both a structural identity and specified biological activity.

Contrary to Applicant's assertions, the specification fails to provide sufficient guidance as to which core structure of SEQ ID NO: 4 is essential for maintain its mitogenic activity and which changes can be made in the structure of SEQ ID NO: 4 and still maintained the same function. In addition: A) there is no indication of human EGFH2 polynucleotide encoding amino acids from about 1 to about 115 or from about 2 to about 115 of SEQ ID NO: 4 on page 36 example 1; B) the specification as filed (page 10, lines 13-20) only disclosed measuring mitogenic biological properties by examining the effects of protein on Xenopus oocyte maturation.

Applicant is in possession of an isolated nucleic acid molecule comprising SEQ ID NO: 3 which encodes a polypeptide comprising SEQ ID NO: 4, a host cell with a vector comprising SEQ ID NO: 3, a method of making SEQ ID NO: 4 using said host cell, and a composition comprising an

isolated polynucleotide comprising SEQ ID NO: 3 for identification of homologous genes, hybridization, amplification, making recombinant EGFH2 and recombinant EGFH2 fusion proteins, and production of transgenic and knockout mice. Applicant is further in possession of SEQ ID NO: 3 which encodes SEQ ID NO: 4 which can be used as an immunogen to make antibodies, and diagnostic assays, such as peptide library screening and yeast two-hybrid screening, and wherein the antibodies which specifically bind to SEQ ID NO: 4 can be used to detect and/or immunoprecipitate the polypeptide of SEQ ID NO: 4.

Applicant is not in possession of or any isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide comprising from 1 to about 115 of SEQ ID NO:4, or any isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide comprising from 2 to about 115 of SEQ ID NO:4 as recited in claim 1, any nucleotide sequence which is 90% identical to SEQ ID NO: 4, about 345 contiguous amino acids of SEQ ID NO: 3, any polynucleotide other than SEQ ID NO: 3 which encodes any amino acid sequence other than SEQ ID NO: 4, any complement of a polynucleotide other than to SEQ ID NO: 3,or any nucleotide sequence which has been mutated so that at least one conservative amino acid substitution has been made which encodes SEQ ID NO: 4, any other polynucleotide to be used in a vector to be placed in a host cell to produce any polypeptide other than SEQ ID NO: 4, or any polynucleotide to be used for *in vivo* gene therapy; any composition comprising an isolated polynucleotide encoding a polypeptide comprising any amino acid sequence from about 4 to 50 of SEQ ID NO:4 as recited in claim 14 (a), or any amino acid from about 9 to 45 of SEQ ID NO:4 as recited in claim 14 (b) or any amino acid sequence at least 86% identical to the polynucleotides as recited in claim 14 (c)

Applicant has disclosed a single human nucleic acid sequence (SEQ ID NO: 3) which encodes a single human polypeptide (SEQ ID NO: 4); therefore, the skilled artisan cannot envision all the contemplated nucleic acid and/or amino acid sequence possibilities recited in the instant claims. Consequently, conception in either case cannot be achieved until a representative description of the structural and functional properties of the claimed invention has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires more than a mere statement that it is part of the invention. The sequences themselves are required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993). The sequence itself is required. A description of a genus of polynucleotide sequences may be achieved by means of a recitation of a representative number of nucleotide sequences, defined by nucleic acid sequence, falling within the scope of the genus, or of a recitation of structural features common to the genus, which features constitute a substantial portion of the genus. Regents of the University of California v. Eli Lilly&Co., 119F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.

Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

The following new grounds of rejections are necessitated by amendment filed 6/12/02(Paper No. 13).

13. The following is a quotation of the second paragraph of 35 U.S.C. 112.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1, 3-9 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Claims 1, 3-9 and 14 recited an isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide comprising from about 1 to about 115 or from about 2 to about 115 of SEQ ID NO:4 or from about 4 to about 50 or from about 9 to about 45 of SEQ ID NO:4 wherin said amino acid sequence has mitogenic activity. How can amino-acid sequence with 1 or 2 amino acid have mitogenic activity?

B) Claims 1, 3-9 and 14 are indefinite and ambiguous in the recitation "from about 1 to about 115 of SEQ ID NO: 4" claim 1(a) second line, or "from about 2 to about 115 of SEQ ID NO:4" claim 1(b) second line, or "from about 4 to about 50 of SEQ ID NO: 4", claim 14 (a); or "from about 9 to about 50 of SEQ ID NO: 4", claim 14 (b). It is not clear whether Applicant mean a number of amino acid or positions of amino acid ?

15. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

16. Claims 1, 3 -9 and 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. *This is a New Matter rejection*:

The "mitogenic activity" claimed in claims 1, 3 and 14, last line, represents a departure from the specification and claims as originally filed.
The passages pointed by the applicant do not provide a clear support for the general term "mitogenic activity". Mitogenic activity of protein and polypeptide can be determine by several different ways, for example, by analyzing the ability of protein and polypeptide to induce lymphocytes proliferation. As such, the term "mitogenic activity" encompasses measuring various types of activity. The specification on page 10, lines 13-20 and Example 3, as originally filed, discloses only one way of determining mitogenic activity by measuring the effects of protein on Xenopus oocyte maturation.

In addition, claim 3 now claimed an isolated nucleic acid molecule comprising a polynucleotide encoding a polypeptide having an amino acid sequence from about 1 to about 115 or from about 2 to about 115 of SEQ ID NO:4 wherein said polypeptide has at least one conservative amino acid substitution and at least 90 % identity with SEQ ID NO:4 and mitogenic activity which represents a departure from the specification and claims as originally filed because specification and claims as originally filed do not provide a clear support for isolated nuclear acid molecule comprising all recited properties.

17. No claim is allowed

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michail Belyavskyi whose telephone number is (703) 308-4232. The examiner can normally be reached Monday through Friday from 9:00 AM to 5:30 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

Michail Belyavskyi, Ph.D.
Patent Examiner
Technology Center 1600
August 26, 2002

CHRISTINA CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600